

EXPLANATION OF PLATE I.

- Figs. 1 to 7. *Terebratula sinuosa*, Brocchi; different ages and variations in form. 7. Interior of the dorsal valve of a small specimen.
Fig. 8. *Terebratula minor*, Philippi.
Fig. 9. *Terebratulina caput-serpentis*, Linn. 9 a. Enlarged illustration.
Fig. 10. *Megerlia truncata*, Linn. 10 a. Enlarged.
Figs. 11, 12. *Argiope decollata*, Chemnitz. 11 a. Enlarged figure.
12. Enlarged interior view of the dorsal valve.
Fig. 13. *Thecidium Adamsi*, Macdonald. 13 a, b. Enlarged figures.
Fig. 14. *Rhynchonella bipartita*, Brocchi.

II.—Contributions to an Insect Fauna of the Amazon Valley.

COLEOPTERA: LONGICORNES. By H. W. BATES, Esq.

[Continued from vol. xiii. p. 164.]

Genus HYLETTUS, nov. gen.

Body elongate-oblong, more or less depressed, free from setæ. Head, as in all the allied genera, much narrower than the thorax, with the antennæ approximated at the base; muzzle short and obtuse; lower lobe of the eyes subquadrate. Antennæ greatly elongated, sparingly furnished beneath with short bristles. Thorax uneven on the surface; lateral tubercles prominent and placed near the middle of the sides. Elytra without smooth lateral keels proceeding from the shoulders. Sterna simple. Terminal abdominal segment in the males with both dorsal and ventral plates notched or emarginated. Ovipositor of the female elongated, tubular; dorsal plate pointed, ventral truncated. Legs moderate; thighs clavate, thickly so in the males; basal joint of the posterior tarsi as long as, or longer than, the two following taken together. Fore and middle tarsi in the male dilated and fringed with hairs.

The chief character which distinguishes this group from *Nyssodrys* is the dilatation and ciliation of the anterior and (in less degree) of the intermediate tarsi in the males. Some of the larger species of *Nyssodrys* have the male anterior tarsi much broader than those of the hind legs, but in none of them are they furnished with the marginal fringe of hairs. The *Hyletti* are somewhat larger insects than the *Nyssodryes*, and the shape of their thorax is somewhat different, the lateral spines being in the form of large or distinct tubercles, and placed near the middle of the sides. The genus approaches *Acanthocinus* and *Graphisurus* (groups characteristic of North America and Europe) nearer than any we have yet passed in review.

Hylettus cænobita, Erichs.

Leipus cænobita, Erichson, Consp. Ins. Col. Peruana, p. 145.

“*L. fuscus*, dense cinereo-tomentosus, supra flavo irroratus, scutello

nigro cincto : elytris puncto infra scutellum maculaque transversa atro-tomentosis, flavo cinctis, apice emarginatis, spina brevi terminatis. Long. $5\frac{1}{2}$ –8 lin.” ♂ ♀.

The examples which served Erichson for his description were obtained by Von Tschudi in Eastern Peru, in the same forest region where, further east, at Ega, I met with it in abundance. The elytra are sinuate-truncate at the apex, and it is only in the male that the outer angle of the truncature is produced into a spine; in the female both angles are acute. The thoracic tubercles are rather small, but stand out distinct from the sides of the thorax.

The *Ædilis griseofasciatus* of Serville (Ann. Soc. Ent. Fr. iv. p. 33), a common South-Brazilian insect, belongs to the present genus, and there are doubtless many other tropical American species yet to be added to it*.

Genus PALAME, nov. gen.

Body oblong, narrow; elytra clothed with short setæ. Head not much narrower than thorax or elytra. Antennæ moderate in length, setose both above and beneath. Thorax with lateral spines extremely small and placed near the hind angles. Elytra free from ridges and lateral keels. Terminal abdominal segment with the ventral plate in the males sharply notched; ovipositor in the female not prolonged, the apical segment being only a little longer than that of the male, with the ventral plate convex and truncated, and the angles of the truncature produced. Legs stout; fore and middle tarsi dilated and fringed with hairs in the male; coxæ and under surface of body also densely hairy in the same sex.

In many points (for example, the setose elytra and antennæ, shape of thorax, and style of coloration) the curious insect forming this genus shows a near degree of relationship with the *Sporeti*, especially with *S. seminalis*. It exhibits, however, an almost equally close approximation to the *Colobothea*, showing that, notwithstanding the great amount of apparent difference between the elongate *Colobothea* and short flattened *Leiopi*,

* *Hylettus decorticans*, n. sp. Oblongus, subdepressus, griseo-fulvus, brunneo variegatus. Caput griseum. Antennæ rufescentes, articulis apice obscurioribus. Thorax inæqualis, griseo-fulvus, tuberculis lateralibus magnis conicis, mox pone medium sitis. Elytra oblonga, postice sensim attenuata (♂), apice oblique truncata, supra passim punctata, punctis basalibus granulis elevatis adjunctis, fulvo-grisca, utrinque maculis lateralibus tribus fuscis, prima elongata, obliqua, pone basin suturam fere attingente, secunda latiore pone medium, tertiaque interrupta prope apicem. Corpus subtus griseum. Pedes rufescentes, tibiis apice tarsisque nigricantibus. Long. 6 lin. ♂. Hab. Venezuela. Coll. Bakewell, Bates.

from which the *Sporeti* differ little, the two extremes are in reality closely bound together by connecting links, and, notwithstanding the almost endless multiplication of specific forms, have not diverged widely from a common plan of structure. The genus *Palame* is readily distinguishable from all allied genera by the hairy coxæ and sterna of the male, and the absence of ovipositor in the female.

Palame crassimanus, n. sp.

P. oblonga, subcylindrica, nigro-olivacea, sericea: thorace vittis quinque cinereis: elytris late subsinuato-truncatis, plagis cinereis nigro maculatis. Long. $3\frac{3}{4}$ lin. ♂ ♀.

Head black; forehead with three ashy lines, and outer orbits of the eyes ashy. Antennæ black, bases of joints paler, those of the fourth to the sixth joints ashy. Thorax convex, above silky black, with five ashy vittæ, the two lateral ones on each side, in some examples, being interrupted, and in others confluent. Elytra slightly narrowed from base to apex; apex broadly subsinuate-truncate, angles of the truncature obtuse, surface silky olive black, and with large ashy patches speckled with black; sides speckled with ashy tomentum: besides the setiferous punctures over the whole elytra, the basal part has a number of simple punctures. Body beneath ashy. Legs black, with ashy pile; tarsi and under surface of body naked in the female; in the male the fore and middle tarsi are dilated and fringed with hairs, and have fulvous brush-like palms, the coxæ and middle of the breast and abdomen being thickly clothed with brownish hairs.

Generally distributed throughout the Amazons region, on both sides of the river. It is found on slender branches of fallen trees in the forest. The terminal segment of the abdomen of the female is scarcely visible beyond the tips of the elytra.

GENUS *TORONÆUS*, nov. gen.

Body oblong, somewhat convex. Head and thorax of nearly equal breadth, and much narrower than the elytra. Antennæ greatly elongated; joints long and slender, sparingly furnished with setæ both above and beneath. Thorax with a slight protuberance on the sides a little behind the middle, in place of the lateral spines. Elytra without setæ, and free from ridges and lateral carinæ. Terminal segment of the abdomen in the males with both dorsal and ventral plates more or less notched at the tip. Ovipositor of the females greatly elongated, and generally exerted beyond its sheath, tubular; dorsal plate of the terminal abdominal segment (constituting the sheath) slender and pointed, ventral deeply cleft at the apex. Legs moderately slender;

thighs clavate; tarsi undilated and simple in both sexes; basal joint of posterior tarsi as long as, or longer than, the three succeeding taken together.

This genus is distinguished from all the preceding by the cleft or deeply notched apex of the terminal ventral segment in the females; in this it agrees with *Graphisurus* of Kirby*, which, again, is connected by intermediate species with *Acanthocinicus*, a group containing the well-known *A. adilis*, or carpenter-beetle, an inhabitant of the wooded parts of our own island. Thus all the numerous genera of Acanthocinitæ are closely linked together; for species of *Nyssodryis* (e. g. *N. signifera*) exhibit to a slight extent the character of a cleft apex of the terminal ventral segment, and this genus leads on without any sharp line of demarcation to *Leiopus*,—showing that the European genera *Leiopus* and *Acanthocinicus*, which appear to us so far asunder, are connected together by insensible gradations of form. The typical species of *Toronaus* (namely those which have no thoracic spines) are easily distinguishable from *Graphisurus*; but if the bounds of the genus be extended a little, so as to embrace a few closely allied species which have small thoracic spines†, the only difference between the two genera will be one of general form, the *Graphisuri* being much flattened, with comparatively short antennal joints, whilst the *Toronaï* have convex shapes and very slender antennæ.

1. *Toronaus figuratus*, n. sp.

T. oblongus, convexiusculus, nigro-castaneus, capite thoraceque vitta centrali ochracea: elytris litura humerali, macula magna communi ante medium antice et postice per suturam excurrente, fasciaque lata inflecta prope apicem cinereo-ochraceis. Long. 4-5 lin. ♂ ♀.

Head dark brown, sides of forehead and cheeks each with a yellowish streak, vertex with a broad central yellowish stripe. Antennæ slender, twice the length of the body in both sexes, reddish, tips of joints dusky, and bases of third to sixth joints whitish. Thorax not much broader than the head, and with a slight protuberance on each side about the middle, but no trace

* This genus comprehends the following North-American species:—

1. *G. fasciatus*, De Geer, Mém. v. p. 114, t. 14. f. 7.
—, Kirby, Fauna Boreali-Americana, Ins. p. 169.
? = *Lamia mixta*, Fabr. E. S. Suppl. 144. 26.
2. *G. obsoletus*, Oliv. Col. iv. p. 130, t. 13. f. 90.
= *Astynomus lævicollis*, Dj. Cat.
3. *G. pusillus*, Kirby, Fauna Bor.-Americana, p. 169.

Acanthocinicus atomarius (F.), of Europe, is also probably a *Graphisurus*.

† Such as *Eutrypanus tessellatus*, White, Cat. p. 372 (= *E. variegatus*, Dej. Cat.), and others, not found in the Amazon region.

of spine or tubercle; above dark chestnut-colour, silky, sides and a central vitta continuous with that of the head yellowish. Scutellum ochreous. Elytra in both sexes very slightly narrowed to three-fourths of their length, then abruptly narrowed in a curved line to the apex, which is subsinuate-truncate; surface punctured, except near the apex, dark brownish chestnut ornamented with marks of a yellowish-ashy hue; there is a small spot on each side of the scutellum, an angulated streak under each shoulder, and a large common spot a little before the middle extending along the suture both towards the base and apex, and connected with an angulated streak which touches the side on each elytron; this patch has a small blackish speck in its middle over the suture: besides these marks, the apex has on each side a flexuous streak enclosing a tooth-shaped spot of the ground-colour of the elytron. Body beneath hoary white. Legs reddish, with ashy pile; apex of thighs, tibiae, and tarsi black.

♂ Terminal abdominal segment feebly emarginated at the apex.

♀ Ovipositor greatly elongated and exerted beyond its sheath, apical dorsal plate of its sheath pointed, ventral deeply cleft.

I met with this elegantly marked insect only at Obydos, on the Guiana side of the Lower Amazons, where it was abundant, in March 1859. It has been found also in the interior of Cayenne by M. Bar, and exists in French collections under the names of *Eutrypanus figuratus* and *E. elegans*, the former of which I have adopted.

2. *Toronæus suavis*, n. sp.

T. oblongus, convexiusculus, nigro-castaneus, capite thoraceque vitta centrali ochracea: elytris litura humerali, fascia obliqua pone medium, linea arcuata laterali prope apicem, suturaque postice cinereo-ochraceis. Long. $3\frac{1}{2}$ – $5\frac{1}{2}$ lin. ♂ ♀.

Head dark brown, sides of forehead and cheeks each with a yellowish streak, vertex with a broad central yellowish stripe. Antennæ slender, reddish, tips of joints dusky, bases of third to sixth joints pale. Thorax not much broader than the head, and with a slight protuberance on each side about the middle, but no trace of spine or tubercle; above dark chestnut, silky, sides whitish, the middle traversed by a yellowish stripe continuous with that of the head. Scutellum ochreous. Elytra in both sexes gradually narrowed from base to apex, the latter sinuate-truncate; surface punctured, except towards the apex, dark brownish chestnut ornamented with yellowish-ashy marks; there is a small spot on each side of the scutellum, a patch beneath and a curved line above the shoulder, an oblique stripe beginning about the middle of each side, and extending to the

suture, connected with a lighter streak on the disk, and, lastly, a distinct arcuated yellowish line on each side near the apex; the suture near the base and apex is also bordered with yellowish ashy. Body beneath hoary white, breast and base of abdomen on each side with dark oblique stripes: abdomen sometimes reddish. Legs reddish; apical halves of tibiæ and tarsi black; basal joints of tarsi ashy.

♂ Terminal abdominal segment with dorsal and ventral plates rather deeply notched.

♀ Ovipositor greatly elongated and exerted beyond its sheath, apical dorsal plate pointed, ventral deeply and narrowly cleft.

This pretty species, which differs from *T. figuratus* by the more tapering shape of its elytra, and by the markings on the surface of the wing-cases, was met with at various places on the southern side of the Lower Amazons, and on the banks of the Tapajos, but never in abundance.

3. *Toronæus perforator*, n. sp.

T. oblongus, convexiusculus, fuseus, nigro fulvo canoque variegatus: elytris apice cinereo marginatis et fasciatis; fœminæ stylo elongatissimo. Long. $3\frac{1}{2}$ – $5\frac{1}{2}$ lin. ♂ ♀.

Head velvety black, cheeks ashy, vertex with a short yellow line. Antennæ slender, more than twice the length of the body in both sexes, reddish testaceous, all the joints except the first and second with a pale ring at their bases. Thorax very little broader than the head, the sides in the middle with a slight protuberance, surface dark brown, with blackish spots on the disk and fulvous spots on the sides, a curved ashy streak below the lateral protuberance. Scutellum black. Elytra oblong, not narrowed until near the apex, at which point they are suddenly narrowed to the tip, which is obliquely truncated; surface thickly punctured, except near the apex, dark purplish brown, sides with greyish marks, and disk spotted with black, sometimes varied also with obscure greyish and fulvous streaks and spots, a more distinct but short oblique pale line existing, in all examples, on each elytron a little before the middle near the suture; the apical margin, both sutural and external, has a neat ashy border, which, being joined to a præapical fascia of the same hue, encloses a transverse blackish spot. Body beneath clothed with silky grey pile. Legs more or less reddish, with ashy and black rings.

♂ Terminal abdominal segment with dorsal plate semicircularly notched at the tip, ventral with a shallower notch.

♀ Ovipositor greatly elongated, the sheath extending more than two lines beyond the tips of the elytra; dorsal plate finely pointed, ventral cleft at the tip.

A widely distributed insect in the Amazons region, being found on the banks of the Tapajos and near Ega on the Upper Amazons. The species has also been met with by M. Bar in the interior of French Guiana. Cayenne examples agree precisely with those found at Ega; but those brought from the Tapajos are much lighter in colour, and have many tawny spots on the upper surface of the thorax and elytra, which are wanting in those of other localities.

4. *Toronæus terebrans*, n. sp.

T. oblongus, convexiusculus, fuscus: thorace antice maculis quatuor fulvis in serie transversa dispositis: elytris nigro griseoque nebulosis, medio macula communi cinerea, ante apicem linea transversa fulva. Long. 4 lin. ♂.

Head velvety black, cheeks ashy, vertex with a short ashy line. Antennæ reddish testaceous, bases of joints (except the basal two) pallid, apices dusky. Thorax very little broader than the head, the sides in the middle with a distinct conical protuberance; surface blackish, sides streaked with ashy, fore part with a transverse row of four distinct tawny spots, an obscure oblique line of the same hue extending from the base towards the disk on each side. Elytra oblong, not narrowed until near the apex, at which point they are suddenly narrowed to the tip, the latter obliquely truncated; surface thickly punctured, except near the apex, purplish brown, varied throughout with pale bluish grey and patches of a black colour, apical part clear brown (including the margins), but crossed by a thin yellowish line from lateral margin to suture. Body beneath silky ashy. Legs reddish, ringed with grey and black.

♂ Terminal abdominal segment with dorsal plate semicircularly notched at the tip, ventral with a shallower notch.

Found only at S. Paulo, Upper Amazons.

5. *Toronæus virens*, n. sp.

T. oblongus, convexiusculus, fusco sericeus, viridi micans: elytris plaga magna ante medium cinerea, apicibus canis utrinque macula transversa fusca. Long. $3\frac{1}{2}$ – $4\frac{1}{2}$ lin. ♂ ♀.

Head sooty black, cheeks yellowish ashy. Antennæ reddish, bases of third to sixth joints pallid. Thorax very little broader than the head, the sides in the middle with a conical protuberance, surface dark brown, becoming green in certain lights; disk speckled with tawny ashy, sides ashy, with a brown streak. Elytra oblong, obliquely truncated, surface punctured, except at the apex; dark brown, with a large patch before the middle, and the apical region ashy, the apical spot enclosing a transverse curved blackish streak: the whole surface has a silky green

lustre in certain lights. Body beneath ashy. Legs blackish, ringed with ashy.

♂ Terminal abdominal segment with both dorsal and ventral plates deeply notched.

♀ Ovipositor projecting one line and a half beyond the tips of the elytra; ventral plate deeply notched.

A common insect on branches of fallen trees in the forest, both on the Upper and Lower Amazons.

GENUS CALLIPERO, nov. gen.

Body elongate, narrow; head and thorax of nearly equal width, and narrower than the elytra. Muzzle short, lower lobe of the eyes short, and narrower below than above. Thorax with a slight protuberance behind the middle, but free from lateral spines or tubercles. Elytra without lateral keels, clothed with short setæ. Sterna simple. Antennæ moderately elongated; third to seventh joints thickened (the seventh thicker than the rest), and densely clothed on their under surface with short setæ, besides the usual longer bristles which exist on all the joints (except the first) both above and beneath. Ovipositor of the female not exerted; terminal abdominal segment elongated and conical, with the dorsal plate pointed, and ventral truncated. Legs moderately elongated; thighs clavate; basal joint of posterior tarsi as long as the three following taken together.

This genus differs from all the genera of *Acanthocinitæ* known to me by the shape and clothing of the third to the seventh joints of the antennæ. In shape of body and style of coloration the species composing it might easily be mistaken for *Cerambycoides* insects of the genus *Rhopalophora*.

Callipero bella, n. sp.

C. elongata, capite thoraceque chalybeis, azureo vittatis: elytris purpureis, sutura azurea, maculis duabus basalibus aurantiacis: corpore subtus azureo. Long. 5 lin. ♀.

Head steel-blue, forehead dusky, cheeks grey, a pale blue vitta extending from the middle of the front to the occiput. Antennæ black. Thorax steel-blue, a narrow central vitta, and on each side a broad lateral one, pale blue. Elytra elongated, broader than the thorax, tapering to the apex, and broadly truncated; surface in the middle with three faint, smoothed, raised lines, thickly punctured towards the base, and covered with finer punctures, each emitting a longish, erect, black bristle; dark blue, changing to purple, suture and apical margin bordered with light cobalt-blue; base of each elytron with a large orange-coloured spot. Body beneath pale blue. Legs black, with grey pile.

I met with one example only of this most charming species, at S. Paulo on the Upper Amazons, where it was found sunning itself on a leaf on the banks of one of the brooks which run through the virgin forest.

Genus COBELURA, Erichson.

Erichson, *Conspectus Ins. Coleop. Peruana*, p. 149.

The founder of this genus likened it to *Colobothea*, mentioning as the only characters which distinguish it the depressed body and tumid mesosternum. *Cobelura*, however, differs from all the genera of the group *Colobotheinæ* in wanting the acute prominent shoulders and sharp lateral carinæ of the elytra which are characteristic of the group. The genus is more nearly allied to *Nyssodrys* and *Hylettus*, differing from both chiefly in the elongate-elliptical shape of the body (which assimilates the species to the *Colobotheæ*), unarmed sides of the thorax, tumid mesosternum, and small size of the lower lobe of the eyes. The only species described by Erichson is the *C. lorigera*, inhabiting the forest region of Eastern Peru, which differs greatly from the following in colours and markings.

Cobelura proliza, n. sp.

C. elongata, subdepressa, postice paulo attenuata, olivaceo-grisea : thorace vitta lata mediana fusca, nigro marginata : elytris maculis irregularibus discoidalibus alteraque laterali majore triangulari ante apicem fuscis, leviter tricostatis. Long. $7\frac{1}{2}$ lin. ♂.

Head clothed with tawny pile. Antennæ reddish, bases of the joints pallid or ashy, apices dusky. Thorax much broader than the head, and much narrower than the elytra, convex and rounded on the sides, the broadest part being the middle; surface olivaceous or tawny ashy, the middle occupied by a broad dusky vitta bordered by black lines; there is also a dusky vitta on each side below the lateral dilatation. Elytra elongated and rather depressed; shoulders prominent, but obtuse; apex obliquely sinuate-truncate, with both angles of the truncature produced (the external one most so), sides destitute of carinæ; surface of each with three smooth costæ, the innermost only strongly pronounced, covered with minute punctures, each bearing a short bristle; dull greenish ashy, with small dark-brown specks and a larger triangular dark-brown spot on the sides near the apex. Body beneath obscure tawny; middle of breast and abdomen, and terminal segment of the latter, blackish. Legs greenish tawny; tibiæ and tarsi ringed with black. Mesosternum with a very large rounded tubercle.

♂ Terminal abdominal segment with both ventral and dorsal plates deeply notched.

I met with a few examples only of this species in the dry woods near Santarem, at the mouth of the Tapajos.

Genus *XYLERGATES*, nov. gen.

Body oblong, robust. Antennæ stout, moderately elongated, sparingly furnished with short bristles beneath. Thorax tubercular on the disk; lateral tubercles large and placed near the middle of the sides. Elytra much broader than the thorax, their deflexed sides broad and vertical, but not separated from the dorsal surface by smooth keels; surface costate and roughened by small tubercles surmounted by short bristles; apices truncated. Sterna narrow. Terminal abdominal segment in the males with dorsal and ventral plates notched. Ovipositor of the females moderately elongated, conico-tubular; dorsal plate obtuse, ventral truncated. Legs stout; thighs thickly clavate; fore and middle tarsi dilated in the males; first joint of the hind tarsi about equal to the two following taken together.

The robust forms and tubercular thoraces of the species composing this genus give them a strong general resemblance to the *Acanthoderes*; they are distinguished, however, by the elongate gradually thickened basal joint of the antennæ, the closure of the anterior acetabular sutures, the ovipositor of the females, and other characters. The genus is very closely related to *Eutrypanus*, no constant mark of difference existing other than the absence of smooth lateral keels proceeding from the shoulders of the elytra. From *Acanthocinus* it is distinguished by the high vertical sides of the wing-cases, the tuberculose surface of the body, and the dilated anterior and middle tarsi of the males.

Xylergates lacteus, n. sp.

X. oblongus, supra planiusculus, postice sensim attenuatus, brunneo sericeus: elytris strigis curvatis lacteis plagas griseas includentibus, apice sinuato-truncatis, angulis exterioribus productis. Long. $6\frac{1}{2}$ –7 lin. ♂ ♀.

Head tawny brown. Antennæ ringed with grey and black. Thorax with large obtusely conical lateral tubercles near the middle of the sides, and with two obtuse tubercles on the fore part of the disk, besides three other smaller ones on the posterior part; surface purplish brown, silky, sides below the tubercles ashy. Elytra broad and straight at the base, thence gradually narrowed to the apex, which is somewhat broadly sinuate-truncate, the external angles of the truncature produced; deflexed sides (towards the base) thickly granulate-punctate; surface with numerous small punctures towards the base, and with four or five interrupted rows of acute blackish tubercles surmounted by short bristles, the middle ones lying along the faint

dorsal carinæ; the colour is silky purplish brown, with (on each elytron) a curved milk-white streak from the shoulders to near the apex bending towards the suture, and two obliquely transverse similar streaks near the apex, all enclosing patches of a light-grey colour and shorter milk-white streaks, the anterior curved lateral lines being connected across the suture by a thin straight line of the same hue. Body beneath tawny ashy. Legs grey, with dusky rings.

♂ Middle of breast and coxæ thickly clothed with brown pubescence. Terminal abdominal segment with ventral and dorsal plates deeply notched, the angles of the ventral notch acute, of the dorsal obtuse. Fore and middle tarsi dilated and fringed with hairs.

♀ Breast, coxæ, and tarsi simple and naked. Ovipositor projecting the length of a line beyond the tips of the elytra; dorsal plate broad and obtuse at the tip.

This elegant and rare species occurred only at Ega and S. Paulo, Upper Amazons. It has since been found also in the interior of French Guiana by M. Bar*.

Group *Colobotheinæ*.

Genus *EUTRYPANUS* (Dej. Cat.), Thomson.

Thomson, *Classif. des Cérambyc.* p. 13.

Char. emend. Body oblong or subelongate, above somewhat plane. Thorax with stout lateral spines or tubercles placed near the middle of the sides, above tubercled or convex. Elytra much broader than the thorax, their deflexed sides broad and vertical, and separated from the dorsal surface by a sharp keel proceeding from the shoulder; surface furnished with setæ, apices truncated. Prosternum narrow; mesosternum broad, nearly square. Terminal abdominal segment in the males more

* The following common South-Brazilian insect belongs to the genus *Xylergates*:—

Xylergates asper, n. sp. Oblongus, supra convexiusculus, postice rotundatim attenuatus, cinereo-fulvus, sericeo-brunneo plagiatus. Caput sordide fulvo-cinereum. Antennæ robustæ, breviusculæ, cinereæ, articulis apice fuliginosis. Thorax supra inæqualis, trituberculatus, fulvo-cinereus, disco plaga obscura brunnea, tuberculis lateralibus magnis acutis. Elytra oblonga, postice (♂ ♀) rotundato-attenuata, breviter oblique truncata, supra punctata, utrinque quadricostata, costis ante apicem abbreviatis, tubercula nigra hispida gerentibus; fulvo-cinerea, plaga indistincta scutellari alterisque duabus apud medium lateralibus angulatis sericeo-brunneis. Corpus subtus fulvo-cinereum. Pedes cinerei, fusco annulati. Maris pectore nudo, segmento ultimo abdominali fortiter inciso, tarsis anticis intermediisque dilatatis, nec ciliatis. Fœminæ stylo modice elongato, segmento ultimo dorsali subacuto. *Hab.* in Brasilia meridionali.

or less notched at the tip. Ovipositor of the females short, projecting but slightly beyond the tips of the elytra, and subconical in form. Legs stout; thighs strongly clavate; fore and middle tarsi of the males slightly dilated; basal joint of posterior tarsi longer than the two following taken together.

The species selected by M. Thomson as the type of this genus is the *E. nitidus* of White (Cat. Long. Col. Brit. Mus. p. 371, pl. 9. fig. 4), which he has redescribed in the 'Classification des Cérambycides' under the name of *E. Venezuelensis*. A considerable number of species will be found to associate with *E. nitidus*, the principal generic feature of which (omitted in M. Thomson's definition) is the sharp lateral keels proceeding from the shoulders of the elytra. This distinguishes the *Eutrypani* well from *Xylergates*, to which some of the species (e. g. *E. ellipticus* of Germar) are otherwise closely related. There is not, however, any positive character whereby to distinguish *Eutrypanus* from *Colobothea*; for some species, by their elongated shapes, might almost be mistaken for *Colobothea*, and the aberrant forms of the latter genus have lateral thoracic tubercles and fore tarsi in the males not differing from those of the intermediate legs, as in the *Eutrypani*. The best distinguishing character is probably this:—in *Eutrypanus* the lateral outlines of the head and thorax are not continuous, and therefore the fore part of the body has not that conical form which gives so peculiar a facies to the *Colobothea*. A less trenchant point of difference is presented by the elytra, which in the great majority of the *Colobothea* are nearly straight to the apex, but in *Eutrypanus* are curvilinearly attenuated before the apex.

1. *Eutrypanus nobilis*, n. sp.

E. oblongus, robustus, brunneus: thoracis lateribus late ochraceo vittatis: elytris maculis trilobis duabus communibus ochraceis, una apud medium suturali, altera majore subapicali: spinis thoracis acutis, retrorsum spectantibus. Long. 7 lin. ♂.

Head dusky, with scant tawny pile. Antennæ twice the length of the body (♂), brown, tips of all the joints blackish, bases pallid. Thorax widened from the front to the tips of the thoracic spines, which are large, acute, and oblique, and placed behind the middle of the sides; surface convex, slightly uneven, dark brown, with a broad ochreous vitta on each side margined with black. Elytra broad at the base, gradually narrowed to near the apex, thence more abruptly narrowed; apex transversely sinuate-truncate, both angles equally and moderately produced; lateral carina extending beyond the middle of the elytra, acute, but not smooth; whole surface thickly punctured, punctures setiferous, colour dark brown mixed with tawny; over the suture

near the middle is a trilobed ochreous spot, and near the apex over the suture is a much broader but similar spot, the two connected by an ochreous sutural line. Body beneath tawny ashy. Legs moderately long; thighs abruptly and strongly clavate, dusky, with ashy pile; two basal joints of the tarsi grey.

♂ Terminal abdominal segment with dorsal and ventral plates very slightly emarginated. Fore and middle tarsi broader than those of the hind legs.

Obydos, on the Guiana side of the Lower Amazons; rare.

2. *Eutrypanus assula*, n. sp.

E. oblongus, brunneus: thorace nigro vittato, elytris nigro cinerisque strigosis: spinis thoracicis brevibus, conicis, pone medium sitis: elytris breviter oblique truncatis. Long. $4\frac{1}{2}$ lin. ♀.

Head brown, vertex with two black spots. Antennæ dull reddish, bases of joints greyish. Thorax with small and conical lateral tubercles placed a little behind the middle, disk uneven, brown, the middle part with two black vittæ, the sides above the tubercles each with two short black lines, below the tubercle a broad black streak. Elytra moderately broad and convex, curvilinearly narrowed from near the base to the apex, the latter briefly and obliquely truncated; lateral carinæ moderately acute and smooth, and reaching beyond the middle of the elytra; surface and sides scantily punctured towards the base, brown, with many black and ill-defined longitudinal streaks, besides a broad indistinct ashy streak beginning at the shoulder, bending towards the suture, and then continuing, parallel to the suture, to the apex; the mode of coloration gives to the insect a striking resemblance to a small chip of bark. Body beneath dusky, with scant ashy pile. Legs reddish, ringed with ashy.

♀ Ovipositor projecting very slightly beyond the tips of the elytra; dorsal plate obtusely rounded at the tip, ventral truncated.

Banks of the Cuparí, a branch of the river Tapajos.

3. *Eutrypanus incertus*, n. sp.

E. elongatus, subangustatus, fulvo-griseus, nigro vittatus et maculatus: spinis thoracicis parvis, conicis, pone medium sitis: elytris postice attenuatis, apice breviter truncatis, nec dentatis. Long. $4\frac{1}{2}$ –6 lin. ♂.

Head blackish, orbits of eyes fulvous. Antennæ black or dull red, third to sixth joints ringed at the base with grey. Thorax not much broader than the head; lateral tubercles small, placed a little behind the middle; disk slightly uneven, ashy tawny, with six black vittæ, the two outermost of which are below the lateral tubercles. Elytra elongate, gradually narrowed to near

the apex, thence more abruptly narrowed, apex briefly and obtusely truncated; lateral carinæ sharp and smooth, surface faintly punctured towards the base, and covered besides with minute setiferous punctures, clothed with tawny pile, much spotted and patched with black, the apical region on each elytron being occupied by a large clear black spot margined with ashy. Body beneath ashy tawny. Legs blackish, with scant tawny clothing; tibiæ ringed with ashy; tarsi with the two basal joints grey.

♂ Coxæ and breast densely hairy, as also (in well-developed examples) the middle of the abdomen. Terminal abdominal segment with ventral plate sharply notched, dorsal moderately so. Fore and middle tarsi dilated and fringed with hairs.

Also found on the banks of the Cuparí. M. Bar has since met with it in the interior of French Guiana. The species, although having an elongated form of body like the *Colobotheca*, does not offer the peculiar facies of that genus, owing to the different shape of the apex of the elytra.

[To be continued.]

III.—*Histological Researches on the Formation, Development, and Structure of the Vegetable Cell.* By Prof. H. KARSTEN.

[Continued from vol. xiii. p. 485, in which volume the PLATE will be found.]

§ VIII.

Conditions of growth of *Spirogyra*.—Endogenous cell-tissue of the joint-cells, consisting of chlorophyll-vesicles and colourless secretion-cells.—Celluline present in the latter as well as in the mother cell, but consumed in the course of vegetation.

THE species of the genus *Spirogyra* are usually adduced by the supporters of Mohl's theory of cell-development, together with *Cladophora glomerata*, as indubitable examples of cell-multiplication by constriction.

The difficulties attending the cultivation of these plants, together with the great delicacy and ready destructibility of the membranes of their endogenous cells, are without doubt the reason that hitherto, notwithstanding the very simple and regular structure of the plants, the presence of these cells has not been recognized; and still less has a complete knowledge of their course of development and of the production thereby of the septal walls been attained, as these cells, on account of the great sensibility of the plant to slight changes in the influences of external agents, can usually be observed directly in their growth only for short periods.

Moreover the *Spirogyra*, like many, if not all, of their allies, are apparently incapable of assimilating pure inorganic matters